

INTERNATIONAL SCIENTIFIC CONFERENCE



GREEN DEVELOPMENT, GREEN INFRASTRUCTURE, GREEN TECHNOLOGY

Skopje, Ss. Cyril and Methodius University, Senate

Hall May 2024

Session - Official opening of the conference

12.00. Thursday, 16.05.2024

H.E. Gordana Siljanovska-Davkova  
President of the Republic of Macedonia

prof. Biljana Angelova

Mr. Orce Georgievski

prof. Filip Ivanovski, Board of GREDIT

Rector of the Ss. Cyril and Methodius  
University in Skopje

President of the association of Local  
Governments

President of the chamber of certified  
architects and engineers

Board of GREDIT Conference

12.45. Press and media

13.00. Sesion of invited lectures - new environmental  
technologies

Chairs: prof.Zoran Sapuric, prof. Sinica Ozimec

Radioactivity in the environmental monitoring, local  
challenges

prof. Stelios Xanthos

Using reversible hydroplants as bateries for the energy  
grid

prof. Zoran Markov

Hydrogen - fuel of todays transport?

prof. Mile Dimitrovski

Hybrid renewable electricity production

prof. Dimitar Dimitrov

14.20. Caffee break

14.30. Sesion 1: Energy, engineering and environment

Chairs: prof. Tihomir Florijancic, Zacharoula  
Andreopoulou

Hydrogen Cogeneration for Ancillary Services and  
Optimization of a Cascade Hydropower System

B.Stojanovski, F. Poposki ,D.Babunski,  
Z.Markov, R.Koleva

Optimization of Production Planning using Fuzzy Analytic  
Hierarchy Process with Sequence Dependent Setup  
Times

Fatih Yigit, Ana Lazarevska

Advanced Experimental Diesel Engine Model Combining  
Thermodynamic And Machine Learning Concepts

N. Manev, D. Dimitrovski, E. Nikolov,  
Z. Markov, R. Filkoski, S. Xanthos

Experimental and numerical investigation of the possibilities for increasing the efficiency of a wind turbine

Petar Tanevski, Viktor Iliev, Marija Lazarevikj, Zoran Markov

Field measurements of airborne sound insulation of partition walls: Macedonian case study

M. Laks, T. Samardzioska, M. Jovanoska Mitreska, J. Dimzova

Addressing The Challenges Of Battery Energy Storage Systems Integration In Renewable Energy Utilization Systems

E. Jovanovikj, N. Manev, M. Pendaroska, D. Dimitrovski

A Review Of The Required Legislative Changes To Facilitate Macedonia's Transition To Renewables

N. Manev, E. Jovanovikj, M. Pendaroska, E. Nikolov, D. Dimitrovski

Production Planning optimization with the Objective of Energy Efficiency

Esra Bozal, Fatih Yigit

16.30. Lunch break

17.00. **Invited guest lecture**

Research on the future vehicle in VV Center

dr. Filip Kitanoski - Virtual Vehicle Center, Graz, Austria

Innovating the future vehicle

dr. Elena Biljanoska

Innovating the future vehicle

M.Sc. Stefan Zlatinov

chairman: prof. Tashko Rizov, UKIM

17.30. **Round table 1 - Innovation a part of green growth**

Host: Dame Dimitrovski

Mr. Frane Sesnic

Director of ZICER, Zagreb Innovation Center, Croatia

prof. Filip Ivanovski

Director of PAKOMAK, Skopje

MSc. Konstantinos Nikolaou

CEO at TITAN Cementarnica Usje, Skopje

dr. Filip Kitanoski

Virtual Vehicle Graz

prof. Tasko Rizov

Faculty of mechanical engineering in Skopje

Mr. Dimitar Alzurovski

Student Formula Macedonia team leader

20.00. Official Dinner - Skopje center

**Friday, 17.05.2024, Rectorate, Conference room 2**

11.00.

Session 2: Circular economy, waste management

Chairman: prof. Ilirian Malollari, prof. Dimitar Dimitrov

Key Speaker

Goals for selection and recycling in EU

prof. Filip Ivanovski

Key Speaker

Goals for selection and recycling in Macedonia

Ana Mazneva

Key Speaker

The potential of methane production from solid organic waste by the anaerobic digestion method with activated sludge

Ilirjan Malollari, Sami Makolli, Terkida Prifti

PEST analysis on CDW – case study about the City of Skopje

Dame Dimitrovski, Irena Bojadzievska

Challenges for establishing regional waste management centers in Macedonia

Zoran Sapuric, Filip Ivanovski, Dame Dimitrovski

Exploring the feasibility of construction and demolition waste recycling in Skopje through analyzing four different scenarios

D. Dimitrovski, M. Uler Zefikj, A. Manchevski

12.30.

Coffee break

13.00.

Session: Environment and nature

Chairs: prof. Igor Seso, prof. Karmina Miteva

Bioacoustic monitoring of the wildlife using modern digital tools in the nature park Kopacki Rid (Croatia)

Denis Deže, Siniša Ozimec, Ivan Plaščak, Tihomir Florijančić, Ankica Sarajlić, Dorijan Radočaj, Mladen Jurišić, Ivana Majić

Monitoring device for ambient CO2: needs assessment and needs analysis

A. Kormushoski, A. M. Lazarevska, V. Gecevska

Ecological Grief Scale-Youth (EcoGriefYouth) Scale Development Study

Mehmet Oğuz Türkmen, Emine Didem Evcı Kiraz

LIFE PROJECT: PRESERVING AND RESTORING FLOODPLAIN FOREST HABITATS ALONG THE MURA-DRAVA-DANUBE RIVERS

Siniša Ozimec, Tihomir Florijančić, Edita Štefanić, Denis Deže, Karolina Tucak

Smart Forestry for Sustainable Development

Christiana Koliouka, Zacharoula Andreopoulou

Smart Lightning Protection Solutions -Indelec

Borce Kolarski

14.30.

Intro to the session – Prof. Dr. BinBin Pearce, TU Delft, Netherlands

Moderator of the session – Mr. Vanja Djinlev, ETH Zurich, Switzerland

**Round table on Energy communities**

Solar Association of Macedonia

Prof. Dr. Dimitar Dimitrov

Energy, water services and municipal waste management services regulatory commission

Mr. Marko Bislimovski

Faculty of Mechanical Engineering Skopje, Ss. Cyril and Methodius University

Prof. Dr. Zoran Markov

Eko-svest

To be determined

Association for Belica Community Development

Ms. Sofija Dukoska

14.00 -	Poster session GREDIT1	
	Jury: prof. Tashko Rizov, prof. Sinisa Ozimec, prof.	
- 16.00.	Zacharoula Andreopoulou, prof. Ilirian Mallolari	
101	Analysis of harmonics comparison between Wind Park and PV Plant integration in Power System	Petrit Emini, Dimitar Dimitrov
102	Mitigating rapid power changes from Photovoltaic Power Plants	Nikola Jovanovski, Dimitar Dimitrov, Nevenka Kiteva Rogleva
103	Electrical network optimization for renewable energy sources	Dimitar Dimitrov, Imer Zenku
104	Grape seed ethanolic extracts from Macedonian vranec ( <i>Vitis vinifera</i> L.) as a source of natural antioxidants	Ljiljana Stanojević, Aleksandra Milenković, Slavčo Aleksovski, Karmina Miteva, Jelena Zvezdanović
105	Antihyperglycemic activity of black pepper ( <i>Piper nigrum</i> L.) fructus essential oils obtained by modified Clevenger-type hydrodistillation	Aleksandra Milenković, Jelena Stanojević, Dragan Cvetković, Goran Nikolić, Ljiljana Stanojević
106	Kinetics of biodiesel production from plum stone kernel oil in the presence of triethanolamine:menthol deep eutectic solvent	Biljana S. Đorđević, Milan D. Kostić, Marija R. Miladinović, Stefan M. Pavlović, Bojan Petković, Olivera S. Stamenković
107	Statistical optimization of cherry stone kernel oil methanolysis catalyzed by CaO	Biljana S. Đorđević, Milan D. Kostić, Marija R. Miladinović, Olivera S. Stamenković
108	Grid-connected photovoltaic plants with lithium batteries and their application to industrial facilities	Aleksandro Vasilevski, Dimitar Dimitrov
109	Chemical composition and antioxidant activity of hydrodistillation wastewater from <i>Hyssopi herba</i> ( <i>Hyssopus officinalis</i> L.)	Nataša Simonović, Kristina Jovanović, Ljiljana Stanojević, Jelena Zvezdanović, Dragan Cvetković, Jelena Stanojević
110	Solid waste from hydrodistillation of <i>Hyssopi herba</i> ( <i>Hyssopus officinalis</i> L.) as a potential source of antioxidants	Nataša Simonović, Kristina Jovanović, Ljiljana Stanojević, Jelena Zvezdanović, Dragan Cvetković, Jelena Stanojević
111	Improving electric grid regulation toward Nearly Zero emission electricity production	Imer Zenku
112	Seasonal variations of air pollutants in the city of Veles	T. Shishkova, A. Chankulovska Tenovska, B. Boshkovski, S. Bogoevski
113	Air quality monitoring in the city of Bitola	A. Chankulovska Tenovska, T. Shishkova, G. Ruseska, B. Boshkovski, S. Bogoevski
114	Antioxidant activity of hydrogels based on gold nanoparticles stabilized by aqueous extracts of blackberry ( <i>Rubus</i> spp.) leaves	M.S. Tasić, J.B. Zvezdanović, Lj.P. Stanojević, J.S. Stanojević, S.M. Petrović, D.J. Cvetković
115	Long-term time series analysis of vegetation activity based on multispectral satellite imagery in Kopački rit Nature Park	I. Plaščak, D. Radočaj, M. Jurišić, S. Ozimec, T. Florijančić, D. Deže, A. Sarajlić, I. Majić

116	The physycal characteristic of pyrolytic fuels obtained with catalytic pyrolysis	K. Miteva, S. Aleksovski, G. B. Gaceva
117	Comparison of the composition of rproduced fuels using two catalysts	K. Miteva, S. Aleksovski, G. Bogoeva Gaceva, J. Stanojevic, L. Stanojevic
118	Isolation of essential oil from tahgerine peel with hydro-distillation, characterization and modelling	V. Fernandes, A. Mateska, M. Meckaroska, A. Nestoroska, M. Sazdova, J. Stanojevic, L. Stanojevic, A. Milenkovic, S. Aleksovski, K. Miteva
119	Fractional hydro-distillation of lavender essential oil	M. Angelova, J. Stanojevic, L. Stanojevic, A. Milenkovic, S. Aleksovski, K. Miteva
120	Isolating cellulose from waste biomass (pinapple, oak, mandarin, lemon, orange, straw and corn)	V. Fernandes, A. Mateska, M. Meckaroska, A. Nestoroska, M. Sazdova, G. Demboski, S. Aleksovski, K. Miteva
121	Ultrasound grape seed oil extraction, kinetics, modeling and optimization	S. Aleksovski, K. Miteva, L. Stanojevic, A. Milenkovic, J. Stanojevic, I. Aleksovski, M. Pejchinovski

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| 18.00. | Cocktail and award ceremony<br>Museum of contemporary art   |
| 18.30. | Farewell party<br>Formula Student Macedonia team - hosting our party<br>Museum of contemporary art, Skopje, Macedonia |

## Roundtable description - GREDIT conference

This session will be a discussion and feedback session for the outcomes of four EU funded projects on energy citizenship. The recommendations of these projects (ENCLUDE, EnergyProspects, EC2, dialogues) have been synthesized in a joint policy brief entitled “Energy Citizenship in the Making” and has been presented to EU policy actors in Brussels. This document contains recommendations for the EU on how better to support the participation of the public in the energy transition after surveying and interviewing 32,000 EU residents over a period of 2.5 years. Our aim with this session is to understand the relevance of such a policy orientation for the energy transition in the Balkan (WB6) region. The following are some of the questions we would like to address during the session:

In what ways do these recommendations have to account for the specific context of this region?

How might some of these recommendations need to be adapted to be relevant for the Balkan (WB6 region)?

What can we learn about the universality about energy citizenship as a concept based on this?

The 40-min moderated discussion will first begin with a brief presentation of the joint policy brief (10 min). This will follow with the reactions of the panelists working within the Balkan region for the energy transition in diverse capacities who have read the brief in detail. Following this, in the last 20 minutes of the session, we will organize a closing activity in which all participants will be offered a chance to provide their input.

The panelists include:

Representative of an energy community (Sofija from Belica)

Representative of research/industry boundary (Dimitar Dimitrov from Solar association)

Representative from Eko-svest

Representative from the regulatory energy office (Marko Bislimovski)

Representative from academia (Zoran Markov)

Moderator: Vanja Djinlev

Introduction: BinBin Pearce

### Draft agenda (80+ minutes)

10 min	Introduction to the joint policy brief on Energy Citizenship and ENCLUDE
40 min	Moderated discussion with panelists
20 min	Audience reflection – Everyone in attendance may provide their input (language can be Macedonian or English)
10 min	Closing reflection from panelists and next steps for the joint policy brief